

Chemistry 129.01, Spring 2017, General Chemistry

Week #12

Class Meetings

Monday, April 24. Experiment 7: Analysis of a Sodium Hydrogen Carbonate Sample. **Remember to come prepared for lab (notebook and clothing).**

Wednesday, April 26. Experiment 7: Analysis of a Sodium Hydrogen Carbonate Sample. **Remember to come prepared for lab (notebook and clothing).**

Friday, April 28. Experiment 7: Analysis of a Sodium Hydrogen Carbonate Sample. **Remember to come prepared for lab (notebook and clothing).**

Assignment

Problem Set #12 - Due Monday, May 1 (at the beginning of class). Late homework will not be accepted.

1. For each solution, calculate the **initial pH** and the **final pH** after the addition of (1) 0.010 mol HCl and (2) 0.010 mol NaOH:
 - (a) 500.0mL of pure water.
 - (b) 500.0 mL of a buffer solution that is 0.155M CH_3NH_2 and 0.145M $\text{CH}_3\text{NH}_3\text{Cl}$.
 - (c) 500.0 mL of a buffer solution that is 0.125M HClO_2 and 0.115M KClO_2 .
2. A 20.0mL sample of 0.150M HNO_3 solution is titrated with a 0.200M RbOH solution. Calculate the pH of the solution after the following volumes of base have been added: (a) 0.0mL, (b) 10.0mL, (c) 20.0mL, (d) 25.0mL, (e) 30.0mL.
3. A 25.0mL sample of 0.130M HF solution is titrated with a 0.250M NaOH solution. Calculate the pH of the solution after the following volumes of base have been added: (a) 0.0mL, (b) 6.50mL, (c) 10.0mL, (d) 13.0mL, (e) 20.0mL.
4. A 30.0mL sample of 0.200M NH_3 solution is titrated with a 0.250M HClO_4 solution. Calculate the pH of the solution after the following volumes of acid have been added: (a) 0.0mL, (b) 10.0mL, (c) 12.0mL, (d) 24.0mL, (e) 30.0mL.

